



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,833	09/12/2003	Shean-Jen Chen	03196-UPS	7733

33804 7590 03/28/2007
LIN & ASSOCIATES INTELLECTUAL PROPERTY
P.O. BOX 2339
SARATOGA, CA 95070-0339

EXAMINER

VALENTIN, JUAN D

ART UNIT.	PAPER NUMBER
-----------	--------------

2877

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/660,833

Applicant(s)

CHEN ET AL.

Examiner

Juan D. Valentin II

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>09/12/2003</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 12 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant has claimed a “metallic nanoparticle layer” (emphasis added), yet in claim 12 claims that the “metallic nanoparticle layer” (emphasis added) can be a dielectric layer such as polymethylmethacrylate (PMMA) or silicon oxide. Examiner is confused as to how a *metallic* layer can be a plastic layer or glass layer? At first thought, it is believed that the dielectric layer of claim two is comprised of either of these two materials. Applicant is asked to please clarify the claim language to better describe applicant claimed invention. Examiner is going to examine the claim as if it was meant that the dielectric layer comprised either PMMA or silicon oxide. If this is not the case, then applicant should amend claim 1 to reflect the fact that the “metallic nanoparticle layer” actually isn’t metallic. This claim language is deceiving and the claims can not be properly searched because of the confusion with the currently scripted claim language.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2877

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1, 2, 6-10, 12 rejected under 35 U.S.C. 102(b) as being anticipated by Florin et al. (USPN '667, hereinafter Florin).

Claim 1

Florin in conjunction with Fig. 1 discloses a surface plasmon resonance sensor comprising a prism 3 having a surface on which a metallic layer is coated 10, a metallic nanoparticle layer formed on the metallic layer 6, a light source 1 giving off a light to the prism 3, the light being reflected by the surface of the prism to form a reflected light, and a light detector for detecting the reflected light (col. 1, lines 30-46, col. 3, line 48-col. 4, line 4, col. 5, lines 40-53, col. 6, line 64-col. 7, line 19, col. 7, line 52-col. 8, line 10).

Claims 2 & 12

Florin as applied above discloses a metal/dielectric interface (col. 6, line 64-col. 7, line 19).

Claims 6-10

Florin as applied above further discloses wherein both metal films consist of gold and silver (col. 6, lines 38-40).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1, 3-7, 9-11, 12-17 rejected under 35 U.S.C. 102(e) as being anticipated by Johansen (USPN '094 B2).

Claim 1

Johansen in conjunction with Figs. 1a & 2a discloses a surface plasmon resonance sensor comprising a prism 210 having a surface on which a metallic layer is coated 220, a metallic nanoparticle layer formed on the metallic layer 230, a light source 120 giving off a light to the prism 210, the light being reflected by the surface of the prism to form a reflected light 490, and a light detector 510 for detecting the reflected light 490 (col. 4, lines 32-35, lines 42-47, col. 5, lines 3-6, lines 42-55, col. 6, lines 31-61).

Claims 3, 4

Johansen as applied above further discloses a wherein the light source comprises a semiconductor laser array for radiating multiple laser beams (col. 4, lines 43-48 & col. 6, lines 24-30), a polarizing device and a half-wave plate for adjusting polarized components of the laser beams (col. 5, lines 19-21 & col. 6, lines 32-46). Johansen does not explicitly state the use of a $\frac{1}{2}$ wave plate, Official Notice Taken. Johansen discloses the use of "polarizing equipment" (col. 6, line 36), it is the position of the Office that is it well known and well within the knowledge of

Art Unit: 2877

someone of ordinary skill in the art at the time of the claimed invention to use a $\frac{1}{2}$ wave plate, $\frac{1}{4}$ wave plate or equivalent in an SPR system to help adjust/control the state of polarization of incident illumination light upon a sample under test.

Johansen discloses the use of a Wollaston prisms which is spectral prism as claimed in claim 4 (col. 6, lines 35-36).

Claims 5, 6

Johansen as applied above further discloses wherein the metallic layer is comprised of gold or silver (col. 4, lines 32-36).

Claim 7

Johansen as applied above further discloses wherein the metallic layer is approximately 50 nm thick (col. 5, line 52).

Claims 9, 10

Johansen as applied above further discloses wherein the metallic nanoparticle layer comprises nanoparticle having a diameter of approximately 1-50 nm (col. 5, line 49).

Claim 11

Claim 11 is a product-by-process claim. The patentability of product-by-process claims is not limited to the manipulations of the recited steps, only the structure implied by the steps. All of the claimed structural limitations have been disclosed as shown above in view of Johansen. The method steps claimed would not result in a structurally different apparatus that was made by a different process such as an evaporation process.

Art Unit: 2877

Claims 13, 14

Johansen as applied above further discloses comprising a self-assembled monolayer adjacent the metallic nanoparticle layer comprised of one of the functional groups SH, NH₂, CHO, COOH, and Biotin (col. 6, lines 50-63).

Claims 15-17

The method is taught by the functions set forth with regards to the apparatus claims 1, 3, 4, 13, & 14 as rejected above in view of Johansen.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

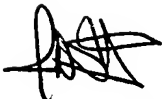
Reference U (PTO-892) discloses the use of half-wave plates, polarizers and a polarization beam splitter (spectral prism) used in a SPR sensor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan D. Valentin II whose telephone number is (571) 272-2433. The examiner can normally be reached on Mon.-Fri..

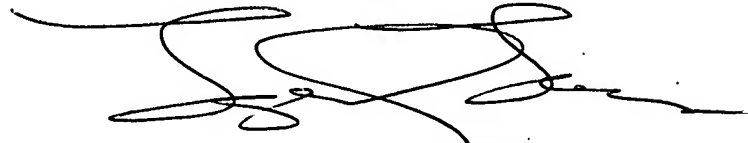
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2877

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Juan D Valentin II
Examiner 2877
JDV
March 22, 2007



LAYLA G. LAUCHMAN
PRIMARY EXAMINER